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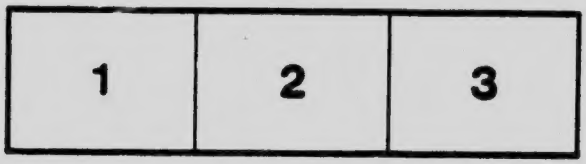

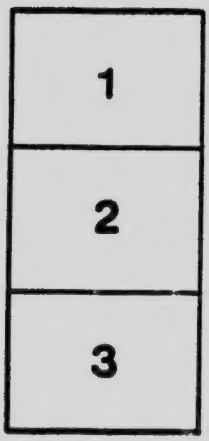

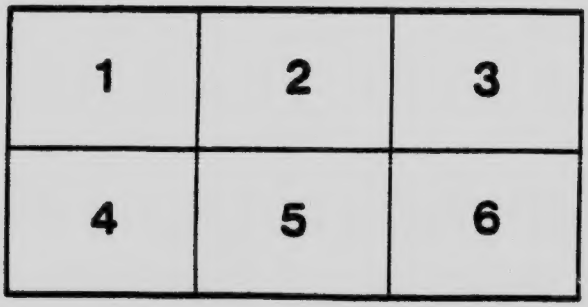

DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

POULTRY DIVISION

THE PRINCIPLES OF POULTRY HOUSE CONSTRUCTION WITH GENERAL AND DETAILED PLANS

BY

F. C. ELFORD

Dominion Poultry Husbandman.

BULLETIN No. 87

Printed by Authority of the Hon. MARTIN BURRELL, Minister of Agriculture, Ottawa, Ontario

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OTTAWA, April 11, 1916.

The Honourable,

The Minister of Agriculture,

Ottawa, Ont.

SIR,—I have the honour to submit herewith for your approval, the manuscript of Bulletin 87 of the Regular Series, entitled "Poultry House Construction" and prepared by the Dominion Poultry Husbandman, Mr. F. C. Elford.

The growing importance of the poultry industry to the Dominion is becoming more fully realized day by day, and much study has been given to the problems of meeting the constantly increasing demand for information on the best methods of poultry keeping, a demand coming from almost every class of the community.

In perhaps no branch of poultry keeping has greater progress been made than in the housing of the flock. The present bulletin, based on trials of various kinds of poultry houses, in all parts of Canada, treats of this subject clearly and comprehensively, and plans and building instructions are so given as to enable anyone to erect the style of poultry house desired.

I would recommend the early issue of a large edition of this bulletin.

I have the honour to be, Sir,

Your obedient servant,

J. H. GRISDALE,

Director, Dominion Experimental Farms.

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POULTRY HOUSE CONSTRUCTION

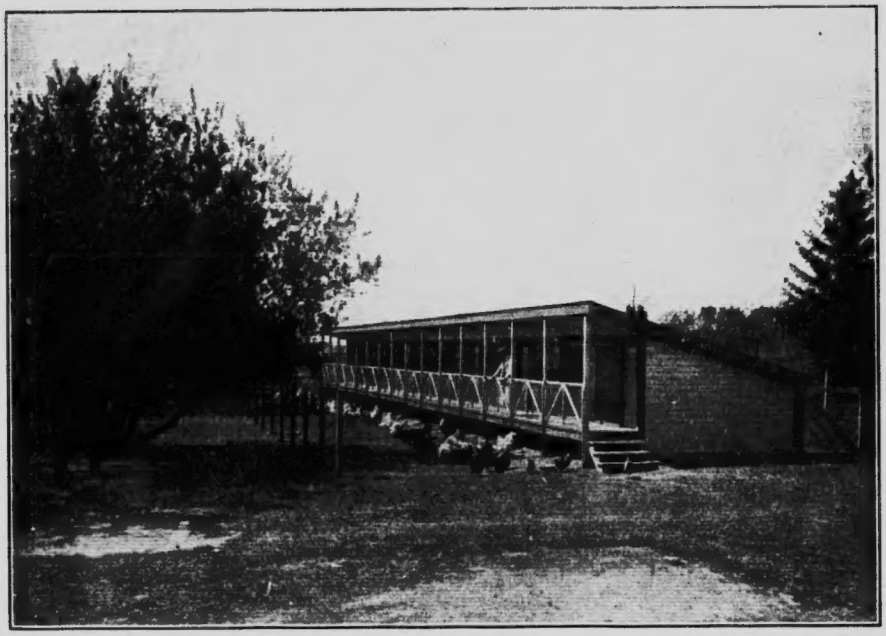


Photo by Dr. Shutt.

EXPERIMENTAL BREEDING HOUSE

An experimental house arranged so that visitors can see the birds either in the pens or in the yards. The house is 12 feet deep and divided into pens six feet wide. The hens get into the individual yards by passing under the raised walk. There are larger yards at the back towards the north, to which the pens of birds have access in turn. The windows are arranged so that frames of glass or cotton may be inserted and the partitions are made of removable cotton screens which allow two or more pens to be thrown into one. The floor is cement.

INTRODUCTION.

The poultry should have a house of its own. Too often it is allowed to find a home among the cattle and machinery. As a result it is voted a nuisance, and under such circumstances it truly is. Poultry houses need not be elaborate, but should be so constructed as to make the fowl comfortable every month of the year. In a climate as in parts of Canada, where there may be 125 degrees variation between the extremes of cold and heat it looks like a big proposition to construct a house that will give ideal conditions to the fowl the year round. It is, however, a comparatively easy matter if the general principles of poultry house construction are borne in mind.

There may be no one house that is universally satisfactory to the whole of Canada. The climatic and other conditions vary so much between the Atlantic and the Pacific, between Southern Ontario and Northern Alberta and Saskatchewan that necessarily there is some difference in what is required of a poultry house. It is, therefore, more a question of the principles involved in the general construction of poultry houses than of particular plans or hard and fast rules.

On the other hand, there are some houses that seem to qualify as generally suitable for certain conditions. Of this class are the Farmer's Poultry House and the Moveable Colony House given in this bulletin. Of these, therefore, detailed plans are given. They are placed first in the pages for the convenience of those who can adopt them as they are, but it is hoped that even these persons will read the bulletin through, for in the other pages are given general principles and hints of construction that may help. There are also included illustrations of special houses that have already proven satisfactory under various conditions in the Dominion.

EVOLUTION OF THE POULTRY HOUSE.

During the past twenty-five years, there has been a gradual evolution in the construction of poultry houses. This evolution has brought the poultry house from the roost in the trees, the hog and cattle pens, the cast-off farm buildings, up to the individual poultry houses of all shapes and sizes, costing anywhere from 50 cents to $20 per hen capacity. The houses have been constructed with straw, logs, stone, cement and wood of all kinds. They have been built permanent and movable. The architect has travelled from the outdoor house with no protection and practically no cost, to the artificially heated, expensive house and back again to the more cheaply constructed house. Now the most successful houses are not expensive; they are cheap and cold, but dry. Experience has shown that neither the cheap nor the dear house offering no protection, nor even the artificially heated house is ideal. Instead of closing hens up to keep them warm, we open up the house to keep them healthy; instead of the heated, damp house we are using the open, dry house; instead of the weak, sickly hen we are now producing the strong, vigorous flock that lays in cold houses when eggs are dear.

The houses that are built today are sensible; though they have plenty of fresh air they have no draughts, though they contain more hens to the square foot there is no dampness. Two essentials that can be had for the taking are provided —sunlight and fresh air—and with these there is no reason why we should not have the healthiest race of fowl found on the face of the globe.

The evolution may not be complete—doubtless there is a good deal more to learn in poultry house construction, but during the past few years the advancement has been rapid and the construction of the poultry house now is a simple matter, and can be accomplished by any person able to use a saw and hammer.

THE FARMER'S POULTRY HOUSE

This house holds one hundred hens, is 16′ x 32′ and divided into two pens, each 16′ square. The house has given satisfactory results on the Experimental Farms system for several years. It has been used in every province in the Dominion and may be built with a single roof or a double roof and a straw loft. In the drier sections of Canada, the single roof is recommended while for the more humid parts the double roof and the straw loft type is to be preferred.

At Ottawa there were used this winter (1915-16) two types of this house, one having a single roof and one a double roof and straw loft. The straw loft house has been the drier but the colder. There has been absolutely no moisture in the litter or adhering to the walls of this house though on cold nights it registered eight to ten degrees colder than in the house with a single roof and no straw loft. It might be well to add that the single roof used here has the under edge of the rafters boarded over as far as the roosts and the space between the rafters filled in with straw. If this type of house should be damp it is a good

THE FARMERS' POULTRY HOUSE.

The shed roof type completed except that the openings in the front near the roof are to be covered with cotton.

THE FARMERS' POULTRY HOUSE.

The straw loft type completed and ready for the yards and pullets.

plan to tack slats or wire underneath the entire length of the rafters and fill in with straw. Both houses are built without drop boards, the roosts being fastened to the wall and the nests are contained in a cabinet along the outside walls. Outside of this they are constructed according to specifications that are given here.

The plans and specifications here given have been followed fairly closely in the building of this house on the Experimental Farms in all the provinces though occasionally some minor changes have been made. It has given such uniform satisfaction in every province that we recommend it for general farm use. Where it is desirable to house more than one hundred hens in one building, the same plan can be extended indefinitely. Should cement floors not be preferred any other floor should prove satisfactory, but it is a cement slab acting as foundation and floor that is described here.

Specifications.

The Foor Merely a Slab.—No trenches are dug for the foundations. The floor is laid upon the ground, the top of the floor being from 10 to 15 inches above the surrounding level.

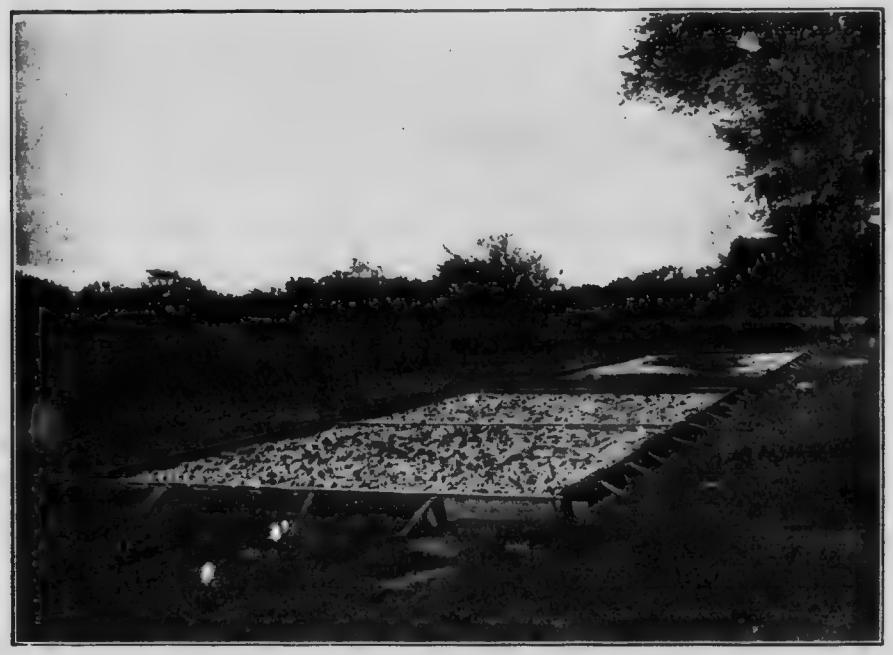


Photo by Dr. Shutt.

THE CONCRETE FRAME AND FILLING.

The one-inch board staked in position, leveled, the 6″ board to hold the bolts nailed on and the filling material put in place. Note that in the far frame the grass appears in the middle showing that the floor is laid upon the very top of the ground.

Making the Frame for the Concrete.—Take enough boards to reach around the outside of the building. Boards one inch thick will do and as wide as the height of the floor is to be above the surface. Set these boards on edge and stake

them in position so that the inside of the boards is the size of the house. Level the top edges, nail lightly to the top edge a six inch board so that it will project in over the floor. In this six-inch strip bore holes every 6 to 10 feet to take a ⅝-inch bolt. These bolts are for the purpose of holding the sill and should extend above the finished floor far enough to go through and screw down a 2 x 4 scantling. When the heads of these bolts become secured in the concrete, remove the six inch boards that hold the bolts in position so that the straight edge can be used to level the surface of the floor.

Photo by Dr. Shutt.

THE ROUGH CONCRETE.

The coarse part of the concrete filled in on the stone and the 6" board removed leaving the bolts sticking out of the concrete.

Filling in the Stone and Cement.—When the frame is leveled and secured, the stone may be filled in. This could have been dumped on the ground before with less trouble except that it might interfere with the leveling of the boards. Stone, brick, plaster, or anything of a like nature should be used to fill up to about two inches from the top of the floor. There should be several inches left around on the inside of the frame to allow for concrete being placed there to form the outer surface of the wall. Then fill in with the concrete to the edges of the frame and to within ¾ or one inch of the finished floor surface. The finishing coat of cement is then put on, leveled with the straight edge to the top of the frame or retaining boards and smoothed off with a trowel.

Proportions of Sand, Stone and Cement.—If broken stone and sand are used, the mixture for the coarse concrete should be one bag of cement to two barrows of sand and four barrows of broken stone (about one inch and a half in diameter). The sand and cement are mixed together, then they are thoroughly mixed

Photo by Dr. Shutt.

THE STRAIGHT EDGE AT WORK.

The fine concrete filled in up to the height of the frame and leveled off with the straight edge. This surface can be troweled off to make a smooth finish. When the cement is set the retaining boards are removed and the edges of the floor wall plastered up.

with the crushed stone, the whole wet with water, mixed again and used at once.

The finishing coat is composed of one bag of cement to one barrow of sand and three barrows of fine crushed stone, mixed as described above and used at once.

If gravel is used, make the rough coat with one bag of cement to six barrows unsifted gravel, not too coarse, and for the finishing coat use one bag cement to two barrows of sand.

Walls.—The exterior walls consist of two by four studding, at centres shown on plans, resting on a two by four sill, and supporting a plate of 2 two by fours. These studs are covered outside with only one ply of tarred paper and one inch tongue and groove boarding, or one inch boards and battens.

On inside, behind and around the ends of the roosts the studding is covered first with tarred paper, then with one inch tongue and groove boarding. Inside partitions are built of studding, covered with wire mesh to within 2½ feet of floor, rest of partition one inch boarding.

Roof.—The rafters are two by four at 20 inch centres, resting on the plate of two by four. On these rafters, lay one thickness of one inch sheeting and ready roofing or if preferred tarred paper and good cedar shingles, laid 4½ inches to the weather.

Windows.—Windows are built between studs as shown, and fitted wi frames for glass, or cotton where indicated. All sashes to be hinged, and swing in. Outside of all window openings is covered with one inch wire mesh.

Doors.—The outside door frames are of two inch stuff, rabbitted for one inch battened doors. Any inside doors are made to match the partition and hung so as to swing both ways.

General.—Provide bins, hoppers, water-stands, roosts and nests as shown. The dropping boards may be left out if desired, in which case the roosts should be hinged to the wall and supported by chains from the roof. and the nests arranged along one of the walls. All equipment should be made movable to allow of ease in cleaning.

Photo by Dr. Shutt.

FRAME OF SHED ROOF HOUSE.

In some of these houses the windows have gone right to the top

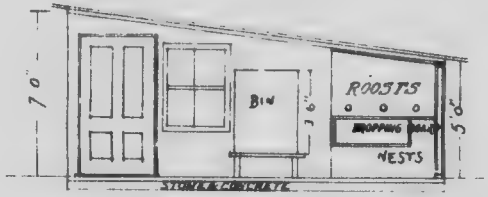
LIST OF MATERIAL REQUIRED FOR FARMER'S POULTRY HOUSE, S 2D ROOF

	Board Feet
Studs, 2″ x 4″—218 lin. feet	146
Plate, 2 pcs. 32′ x 2″ x 4″—64 lin. feet	43
Sill, 2 pcs. 32′ x 2″ x 4″ 2 pcs. 16′ x 2″ x 4″ 96 lin. feet	65
Rafters, 17 pcs. 16′ 6″ x 2″ x 4″—280.5 lin. feet	187
Floor, (T & G) 512 sq. feet (+10%)	564
Wall Boarding, (T&G) 781 sq. feet (+10%)	860
Roof Boarding (1″) 612 sq. feet	612
One Roll Building Paper.	

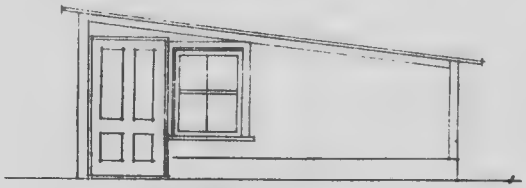
FARMERS POULTRY HOUSE Shed Roof.

END ELEVATION

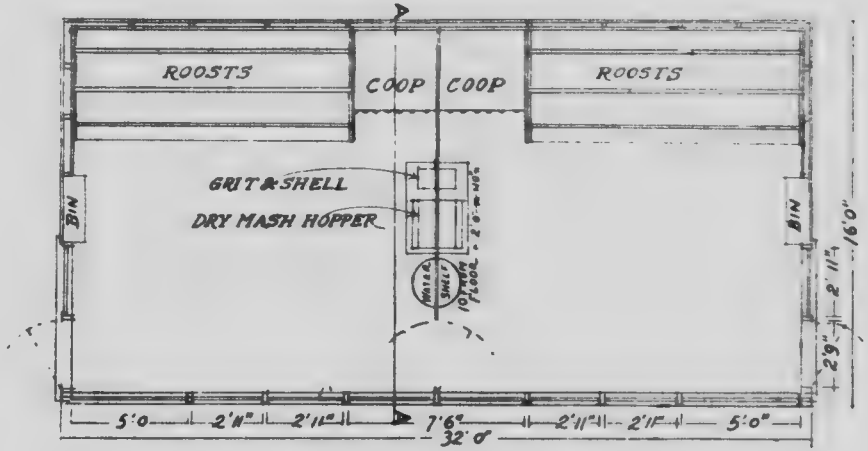
FRONT ELEVATION



SECTION A.A



END ELEVATION



GROUND FLOOR PLAN

Shingles, 612 sq. feet.
2 Windows 5′ x 5′ and frames, cotton and wire mesh.
2 Windows 3½′ x 5′ and frames, cotton and wire mesh.
4 Windows 3′ x 5′ and frames, glass and wire mesh.
2 Windows 3′ x 3½′ and frames, glass only.
2 Doors 2′ 9″ x 6′
Hardware (hinges, nails, etc.,) Paint (3 coats)

FOR 2″ CONCRETE FLOOR:

5 bbls. Cement.
1½ cu. yds. Sand.
2¾ cu. yds. Gravel.

Photo by Dr. Shutt.

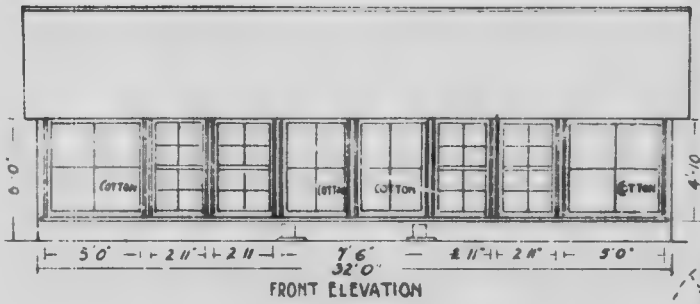
FRAME OF STRAW LOFT HOUSE.

The ventilator in the gable is removable so that the straw can be put in through this opening. A small hinged door would be just as serviceable. It could be shut during cold weather and opened when the weather was mild.

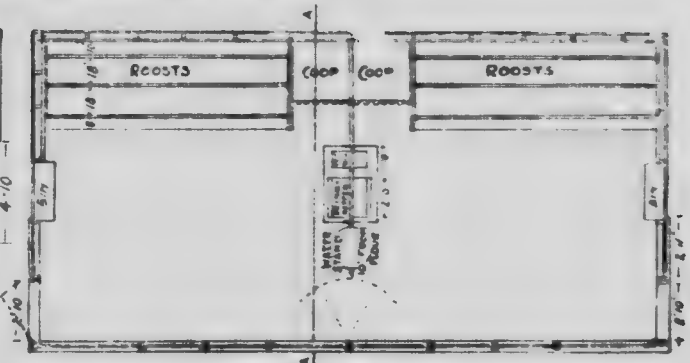
LIST OF MATERIAL REQUIRED FOR FARMER'S POULTRY HOUSE, DOUBLE ROOF AND STRAW LOFT.

	Board Feet
Studs, 2″ x 4″—262¼ lin. feet	175.5
Plate, 2 pcs. 32′ x 2″ x 4″—64 lin. feet	43
Sill, 2 pcs. 32′ x 2″ x 4″ / 2 pcs. 16′ x 2″ x 4″ — 96 lin. feet	65
Rafters, 24 pcs. 10′ x 2″ x 4″—340 lin. feet	227
Floor, (T & G) 512 sq. feet (+10%)	564
Roof Boards, 680 sq. feet	680
Shingles, 680 sq. feet	
One Roll Building Paper.	

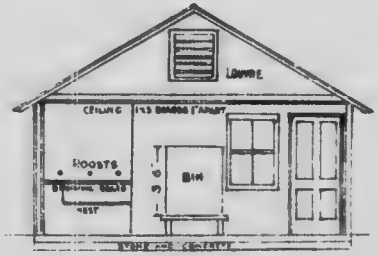
FARMERS POULTRY HOUSE DOUBLE ROOF & STRAW LOFT



FRONT ELEVATION



GROUND FLOOR PLAN



SECTION A.A

(WEST) END ELEVATION

(EAST) END ELEVATION

Wall Boarding (T & G) 800 sq. feet (+10%).....880
Ceiling Joists, 17 pcs. 16′ 2″ x 4″—272 lin. feet....187
Ceiling Boards, 68 pcs. 32′ x 1″ x 3″—2176 lin. feet...384
2 Windows 5′ x 5′ and frames, cotton and wire mesh.
2 Windows 3½′ x 5′ and frames, cotton and wire mesh.
4 Windows 3′ x 5′ and frames, glass and wire mesh.
2 Windows 3′ x 3½′ and frames, glass only.
2 Doors 2′ 9″ x 6′.
2 Lowered Windows 2′ x 2½′.
Paint (3 coats), Hardware (hinges, nails, etc.)

FOR 2″ CONCRETE FLOOR:

5 bbls. Cement.
1½ cu. yds. Sand.
2¾ cu. yds. Gravel.

Photo by Dr. Shutt.

A GOOD TYPE OF MOVABLE COLONY HOUSE.

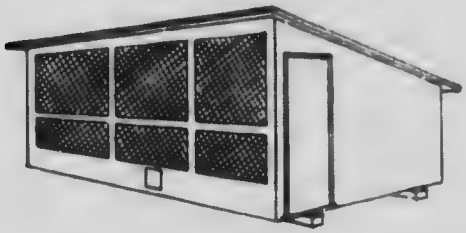
This house may be built 8′ x 12′, or as much bigger as the size of the farm gates and the moving power will permit. If preferred the glass may, instead of an upright window, be built low and wide along the top of the wooden part of the front, as shown in the plan.

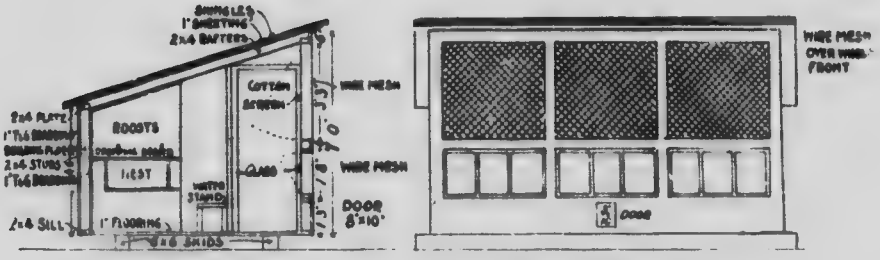
LIST OF MATERIAL REQUIRED FOR MOVABLE COLONY HOUSE.

		Board Feet
Plate, 2 pcs. 12′ x 2″ x 4″—24 lin. feet.....		16
Sill, 2 pcs. 12′ x 2″ x 4″ 2 pcs. 8′ x 2″ x 4″	40 lin. feet.....	27
Studs, 7 pcs. 4′ 6″ x 2″ x 4″ 6 pcs. 6′ 8″ x 2″ x 4″ 2 pcs. 6′ x 2″ x 4″ 2 pcs. 5′ 4″ x 2″ x 4″ 2 pcs. 4′ 10″ x 2″ x 4″	103.8 lin. feet...	70

Rafters, 7 pcs. 8' 3" x 2" x 4"—57.7 lin. feet..... 39
Skids, 2 pcs. 13' x 6" x 6"—26 lin. feet..... 78
Roof Boards, (1") 121 sq. feet.....121
Floor Boards 1" (T & G) 96 sq. feet.....110
Shingles, 121 sq. feet.
Boarding, (T & G) 313 sq. feet.....360
100 sq. ft. building paper.
3 Window frames, glass and wire mesh 1' 8" x 3' 7".
3 Window frames cotton and wire mesh 3' 7" x 3' 3".
1 Door 2' x 5' 6".
Paint, (3 coats), Hardware, (nails, hinges, etc.)

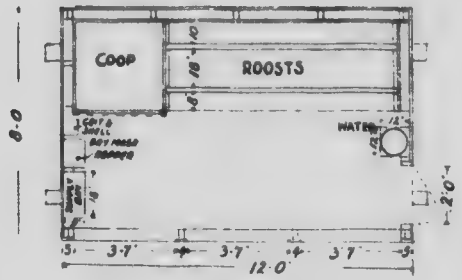
A MOVEABLE COLONY HOUSE.



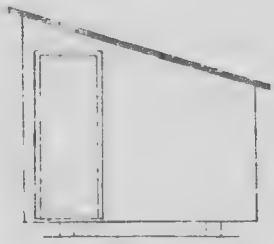


SECTION

FRONT ELEVATION.



PLAN



SIDE ELEVATION.

COMMERCIAL POULTRY HOUSE.

20' x 20' for 100 hens, height 6' in front and 4½ behind.

COMMERCIAL POULTRY HOUSE.

There was built at the Central plant, Ottawa, in 1915, a house to accommodate one hundred hens. The foundation is concrete, constructed the same as that for the Farmer's Poultry House. The roosts are hinged to the back wall without dropboards, the nests are a cabinet of eighteen trap-nests placed against the west wall. The hoppers and feed bin are arranged along the east wall just inside the door.

ESSENTIALS OF A GOOD HOUSE

From the standpoint of the hen it should be *COMFORTABLE* and *SANITARY;* and from the manager's viewpoint it should be *CONVENIENT* and of *LOW COST.*

A COMFORTABLE HOUSE does not mean a warm house, but it *does* mean a dry house, a house where no moisture adheres to the walls. If a house is damp the dampness comes from without or within or both. That from without is due to lack of drainage and will be considered under location, that from within may come no matter how dry the location. It is sometimes harder to determine the cause, but it may be due to too many birds to the size of the pen, to lack of ventilation, or to both of them. The number of square feet per hen will be discussed in another paragraph, as also systems of ventilation, but both may be the cause of a damp hen house with which no poultry man can be successful. See that the house receives no moisture because of location, and make sure that lack of ventilation does not create moisture from within.

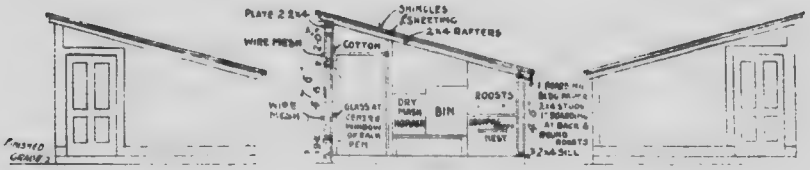
For most breeds kept in Canada, a house need not be artificially warmed. If the air is dry and the birds healthy it is almost impossible to freeze them. A well-fed hen in a dry house will be comfortable.

Sanitation—This can be obtained by cleanliness and ventilation. A house must be kept clean at all costs, not that it has to be cleaned and swept out each day, but kept free from foul smells and vermin. Some system of cleaning and disinfecting the house should be adopted; the simpler the system the better the chances there are for gaining the results.

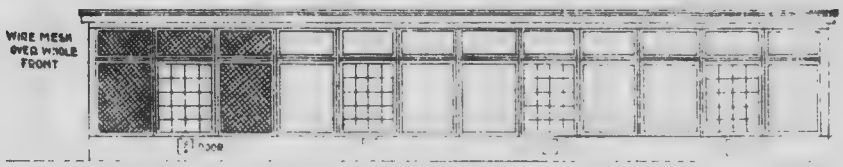
Thorough ventilation is most important. If poultry houses were ventilated as they might be there would be fewer diseases than there are. Tuberculosis and kindred troubles can almost all be traced to lack of ventilation. Allow both the fresh air and the sunlight in, and the hens will not suffer from lack of sanitation, the house will be dry and the birds healthy.

ANOTHER TYPE OF

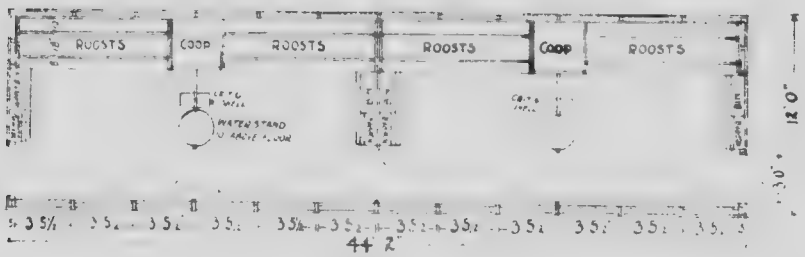
HEN HOUSE FOR 100 HENS.



END ELEVATION. SECTION END ELEVATION



FRONT ELEVATION



PLAN

HOUSE FOR FOUR PENS OF TWENTY-FIVE HENS EACH.

This plan gives another arrangement of a 100 hen house. The house is 44' 2" x 12' 0" making four pens 11' x 12' which accommodates twenty-five hens each.

Convenience.—Though this feature concerns the manager directly, it indirectly affects the poultry. The more convenient it is to do the work the easier it is, and the surer that it will be done; the poultry plant should be "get-at-able" for the manager or feeder. Often no thought is taken of the location of any farm buildings, and poultry buildings in particular. The poultry house is just as likely as not to be at the far side of the stables, just as far away from the house as possible. As a rule the woman on the farm looks after the poultry, and her poultry work is often made much harder than is necessary. Owing to inconvenient arrangement, the person who feeds the poultry spends at least double the time and walks twice as far as there is need of. No matter who is expected to look after the poultry, put the poultry house where it can be got to readily, and also make it possible to feed the poultry without having to run to the granary or stable for grain. In the gate, the door, the driveway, and everything connected with the poultry, convenience should be studied. Often this one item determines the difference between pleasure and drudgery, and the one is as easy as the other to have. Not only should the house be accessible, but the internal arrangements ought to be such that the necessary work may be done with the least amount of labour. If the man can do the work in the hen house with the ease with which it is done in the horse stable, there will be fewer filthy poultry houses and much better returns.

FARMERS' POULTRY HOUSE, SHED ROOF, NAPPAN, N. S.
The openings shown in the front are cotton.

A gate that swings both ways is a convenience, as the feeder may be carrying two pails of water or feed; so is a gateway wide enough to admit a wheelbarrow and high enough that one does not strike the head; a plank or a wheelbarrow load of gravel laid down to enable one to pass over the wet place dry-shod. Up-to-date farmers have all this in their other farm buildings; why should they not have it for their poultry? Inside the door have a covered box or barrel into which a sack or two of feed can be put from the load at the door by the boys or the hired man. On a card tacked above can be marked the amount of feed put in during the year; on this same card can also be marked any other data, number of eggs, hens setting or dying, etc. The feed box will insure that there is always feed when the time to feed comes. A measure can be kept in the box, and the feeding operation is simple.

Economy.—This should always be practised in house construction. One can go to the extreme both ways; a house can be built too expensively as well as too cheaply; few people, however, put too much expense on the poultry house, though occasionally, where special attention is given to appearance, there may be such a tendency. As long as the house gives the hens comfort it need not be elaborate. It is not fair to lay a burden of several dollars of debt on each hen if the house can be built for $1 per head. The extreme, however, usually goes the other way—the house is not good enough. A good house is economy though the aim should be to build a house that suits local conditions with as little expense as practicable.

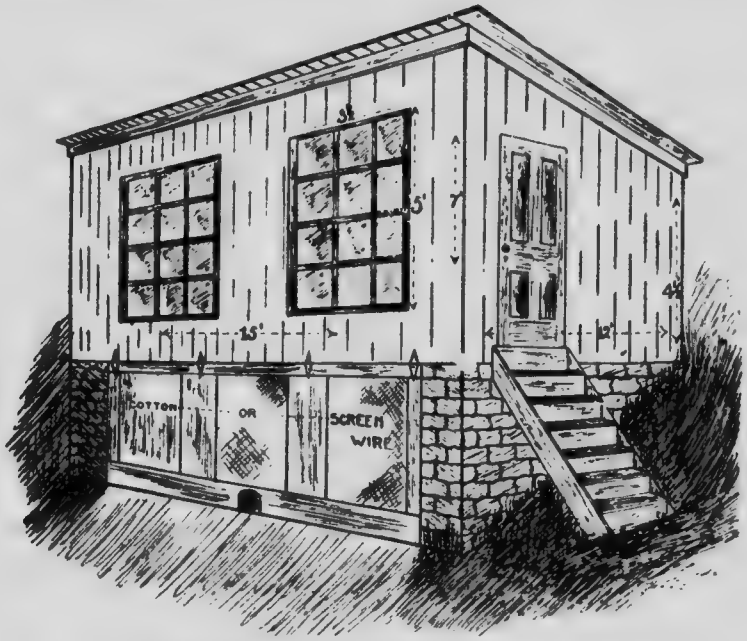
Photo by Dr. Shutt.

TOO MUCH FOUNDATION.

Note the difference in construction between this and that shown in the Farmers' Poultry House which is just as good and much cheaper. This foundation extends 5 feet below the surface to get beneath the frost line.

LOCATION OF POULTRY HOUSES

When movable poultry houses are used, the location is of minor importance, as it can be changed every day if necessary, but where permanent houses and yards are constructed the question of location is of primary importance. Many farm poultry houses are situated just where they ought not to be. No thought of proper location seems to have been exercised, and why they are permitted to remain nobody knows. Sometimes the location is of so much importance that it means success or failure.



CONVENIENT HOUSE FOR HILLSIDE.

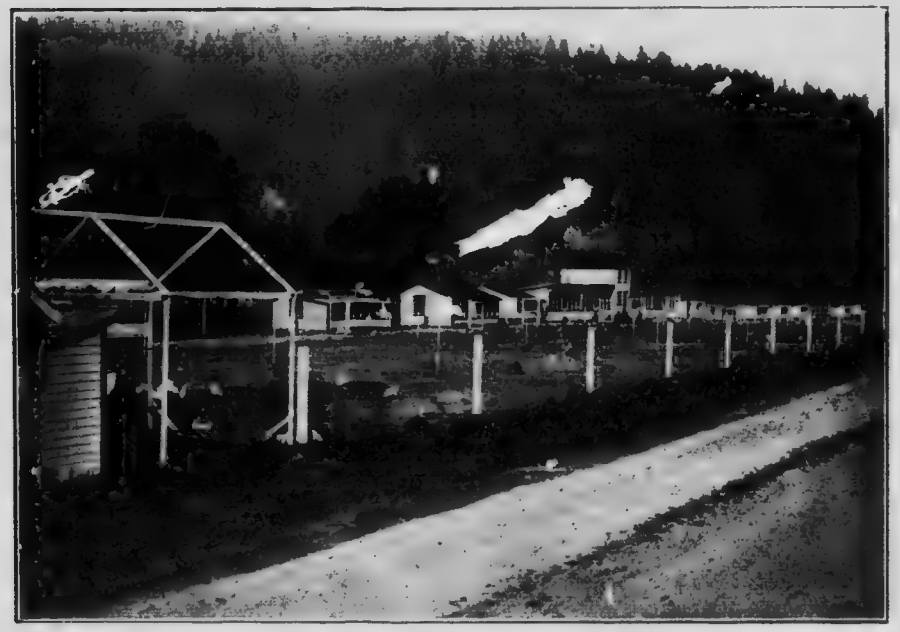
It is also a good house where there is a great deal of rainfall and where it is sometimes difficult to keep the floors dry. This house has the advantage that it has two floors under the one roof. The basement with its front of netting or cotton is used for a scratching shed. The feed can be given either here or on the floor above, according to the weather.

It is true the poultry plant on most farms is already located, and in this case the best that can be done is to make a few suggestions that might improve conditions. Where, however, there is a choice of location, it is well to consider some of the points that go to make up an ideal place. It might be noted that no two conditions are exactly alike—that what might suit one would not suit another; that because one man does well with certain equipment it is not a conclusive reason that another man should expect to do the same. This being the case, hard and fast rules cannot be laid down, but there are certain general principles that might assist one in the choice of a location:—

Must Be Dry.—For this purpose, light land gives best results, but by this it is not meant that sandy land is to be preferred. It is better to have land that

will grow green food for the poultry than bare sand, but good underdrainage is desirable. Where heavy land only is available, it must be made dry by being well underdrained. It is best to place the house on the highest part of the land so that all surface water will flow away rather than toward it. It should be placed where no water can back up, or where the spring floods will not wash out. It should never be placed in a hollow, not only because the water gathers there, but because of the atmospheric drainage. The cold, damp air flows to the hollows. Cold air settles in low places. A low place, though sheltered from the wind, may be several degrees colder than a higher place a few yards distant. The floor of the house should be at least several inches higher than the surrounding land, and where the land is flat a foot or more may be desirable. It is an advantage to have the land fall away from the south side of the house.

Facing the Sun.—The front of the house should face south or southeast. The aim is to have the windows facing the direction from which the most sun comes. The sun is our cheapest disinfectant. Houses that face the sun will get the largest amount of exposure to its rays; this will make the house brighter and more cheerful.



A GOOD WINDBREAK.

The Poultry Plant at the Experimental Farm, Agassiz, B. C. Since this photo was taken an administrative building has been built. It stands in front of the large poultry house with the higher centre, at the extreme right of the picture.

Windbreak—If poultry houses are placed on the top of knolls, they will get more wind than if placed in hollows. We do not want too much wind, however, and we must make provision against it. If there is a bluff or an orchard, or any other windbreak, even the side of a barn, and the house can be placed on the south of it, have it there. In some sections, where the wind is very severe, it will be a decided advantage to plant an artificial windbreak if nothing already exists.

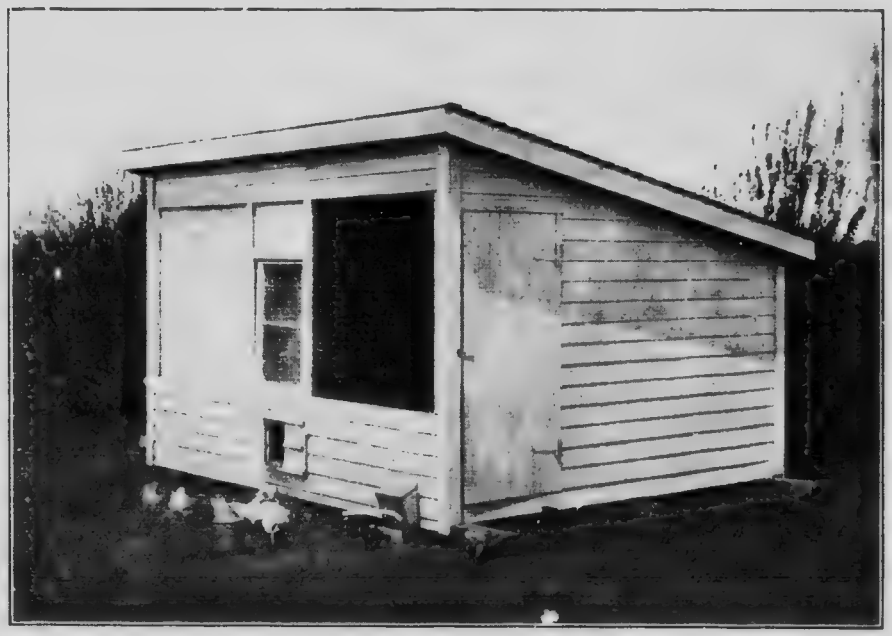
It is better, however, to have the dry location though one may have to put up with some wind, rather than a damp location surrounded by windbreaks.

Water.—Hens require a great deal of water. The water should be fresh, and provided with as little labour as possible. If there is a running stream available, by all means have the hens or the yards within easy distance. The cheapest and best way to water hens is by allowing them to help themselves at a running brook. Where this is not possible, sometimes an overflow can be arranged from the cattle trough or the kitchen pump. In the winter, when water freezes almost as soon as it is put out, snow may be used instead of the water. There should be plenty of it within the house so that the hens will not become chilled in getting it.

Allow for Growth.—Where permanent buildings are constructed, that is, buildings that will last for years, it is well to look ahead. Plan so that the buildings may be enlarged or added to, as the poultry operations may grow. Trouble is sure to exist if poultry are crowded into small houses and runs. Plan to be able to provide sufficient room for any growth in the future.

PERMANENT VS. MOVABLE HOUSES

A permanent house is any house that is built on a permanent foundation, while a movable house is one which is so constructed that it can be moved from place to place. Movable houses are necessarily built small. They are very often called colony houses. A movable house is always a colony house, but a colony house is not always a movable house, as it may be built stationary. Colony houses



MOVABLE COLONY HOUSE.

This house is used at the Experimental Farm, Brandon, Man. It is 10' by 14' and accommodates 30 to 35 birds. Houses larger even than this may be moved from place to place on a prairie farm where the land is level and more horses are driven in a team than in the east.

contain only one family or colony of birds, hence the name. Both styles of houses have their own advantages and disadvantages.

Permanent Houses.—The permanent house can usually be built at less cost per hen capacity. In bad weather it is easier to get from one pen to another when the hens are under one roof, and the hens are probably better protected from the cold and wind.

Photo by Dr. Shutt.

PERMANENT HOUSE FOR COCKERELS.

House for running cockerels from the time they come off range till used for breeding. When the birds are removed the house is converted into a brooder house. Electric hovers are placed under the drop boards and temporary runs made in front. It will be noticed that one wing has board in front where the other has cotton. After two years' trial the wood was removed and cotton substituted as being more satisfactory. The pens in one wing are 3' wide and in the other wing 6'. The building is 10 feet deep.

Movable Houses.—On the other hand, the movable colony house is simply made and can be moved from place to place as feed, weather and convenience suggests. For the small village lot or on land too rough to move the house there is no advantage to build it movable. For the farmer or the poultry man who has level land the movable colony is a decided advantage. One of the troubles in keeping poultry housed in permanent houses is the difficulty of keeping the land pure and sweet. With the movable house the yards can be changed at will, the poultry may be housed in one field after another, and thereby, instead of the poultry becoming a nuisance, they become a decided advantage. They help scatter fertility over the farm. One can thereby have a rotation—poultry and farm crops, and each helps the other. Where poultry is used in combination with a fruit farm, the houses can be moved along the edge of the orchard. These

houses can be used also most advantageously with ordinary farm crops, and especially with corn, roots, etc. In growing grain, young chicks are easily reared while being housed along the headland or in a rough part of the field in movable houses. The grain forms a protection against the hawks, etc., and any little damage that may be done to the grain is more than made up for by the bugs and insects eaten.

An added advantage in this method is that a comparatively small outlay is required to start. Sufficient house room to accommodate the present flock only is required; additional houses can be built each year as the increase in the flock demands. Feed that might otherwise go to waste can be utilized. More advantage of the weather can be taken. In the spring the poultry house can be drawn into the sun and as the weather becomes too warm it can be taken to an orchard or bluff where the trees will shade the birds from the hot sun.

With movable houses fences are not essential, while a permanent house requires a permanent yard, the fencing of which frequently costs as much as the house. The colony housing makes it possible to use a system of feeding that saves labour. Where the hens have an unlimited range, they can be fed by the hopper system better than where they are yarded. This method of feeding saves much labour and can be used to advantage with the colony housing.

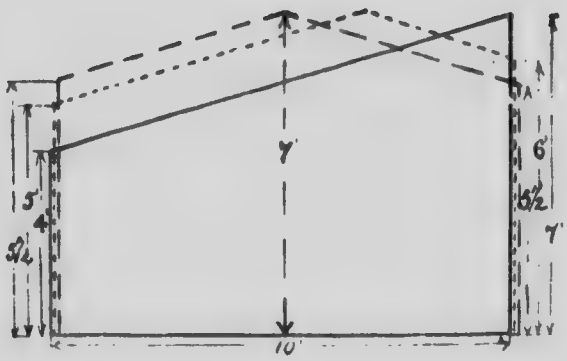
A Combination.—Where more than 100 hens are kept, it is sometimes an advantage to have both permanent and movable houses. Should 100 pullets be retained each year, have a poultry house large enough to accommodate these, put them in their house early and feed for eggs. The best of these pullets can be put into colony houses the following year and kept for breeding. After the breeding season they can be marketed and their houses used for young chicks.

POINTS TO BE REMEMBERED IN CONSTRUCTION

Materials.—In deciding what material to use in the construction of the poultry house, the two points, efficiency and cost, are of most importance. The question of appearance will have some weight, and, of course, where we can get attractiveness with a low cost and maximum efficiency it might be acquired. As a rule, wooden houses have given the best results; in many sections wood is the cheapest material; it is also handier to use as more people understand working with wood than with any other material. The cost of the materials must be considered, and other things being equal the cheapest used. As for efficiency in material, it is necessary that the wall provide suitable insulation and a dry atmosphere; a solid cement wall is not as satisfactory as the hollow block. Where solid walls are constructed, insulation must be provided on the inside. Satisfactory poultry houses have been built with all kinds of material, and aside from cost it does not matter what is used so long as the hens are comfortable.

No Nooks or Corners.—Except for appearance, attractive poultry houses carry no advantages and frequently are accompanied by disadvantages that should not be permitted. Poultry houses are easily dirtied—the scratching of the litter by the hens fills the house with dust, and dirt; the house should therefore be made with as few nooks and corners as possible. Such places, besides collecting dust, are breeding spots for lice. Start out with the idea of building your poultry house with as few such places on the inside as possible.

Insulation.—Where double walls are built, shavings are better as a filler than sawdust; in many cases a dead air space is more satisfactory than either. Dry



TOTAL LENGTH OF SIDES, ROOF AND FLOOR IN EACH CASE

31 ft 6 ins
31 - 6 "
31 - 6 "

DIFFERENT TYPES OF ROOFS.

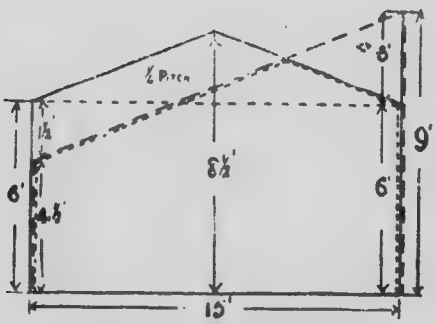
Showing three types used which will cost the same. In each case the sums of the front and back wall are equal, and the length of the rafters in each case is also equal.

TOTAL ROOF

16½
16½
16½

TOTAL SIDES

13½
12'
10½



RELATIVE COST OF SHAPES OF ROOFS.

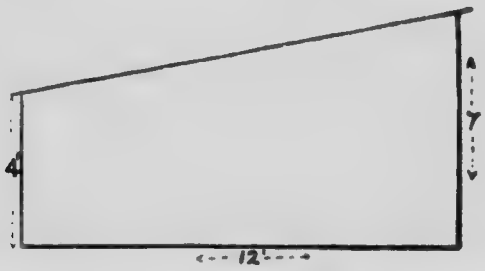
It does not make any difference what the shape of the roof is, the house will cost practically the same, providing the slope of the roof is the same, and the height of the front and back wall and the length of the rafters are equal. In the illustration all three types will differ in cost.

paper is a very useful material in the walls. The aim should be, however, rather than to make the place frost proof, to make it free from draughts, and what openings are used should be all at one side, the south.

Floors.—Floors in many places are made of earth. Where rats are present, it is better to use cement in permanent houses; in fact there is no floor as suitable as the cement floor; it is rat proof; it is dry; it can be constructed fairly economically, and it will last as long as the house. Objection has been raised to the use of cement floors owing to the cold nature of the cement, but where litter is used, and it always should be in this climate, poultry will not suffer on this account. Wooden floors, if used, should be placed sufficiently high from the ground so that vermin cannot find a harbour. If a rat can get underneath, make it high enough for the cat to follow. Cement floors are, of course, not suitable for movable houses. In some cases nothing but earth is used, but usually wooden floors give best results where houses are moved from place to place.

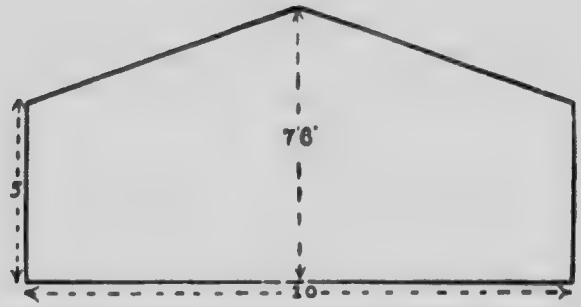
Height of the House.—Just how high the ceiling should be depends entirely upon the feeder. All that the poultry require is that the place is high enough to get thorough ventilation and to allow the entrance of the sunlight. A few feet might therefore be high enough to suit the poultry, but such a house would be so inconvenient that few people would care to enter it; so the height of the house must depend upon the man or woman who looks after it. If one part of the roof is made higher, have the highest portion where the feeder will have to walk when attending the fowl. The lower part will, in all probability, be high enough for the hens.

Shape of Roof.—There are, probably, as many different shaped roofs to hen houses as to dwellings, and every style has its advantages as well as its disadvantages. As to the cost of the different shapes, all styles cost about the same, providing the roof is the same slope, and the sum of the height of the front wall and the height of the back wall, added to the length of the roof, is equal.

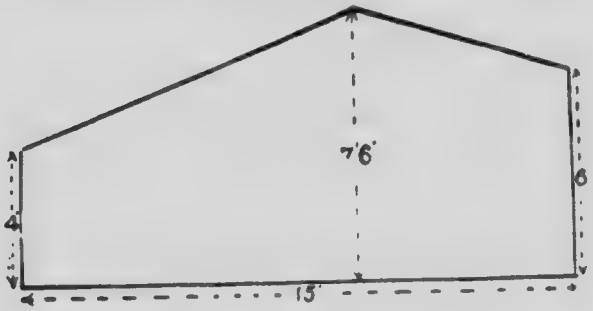


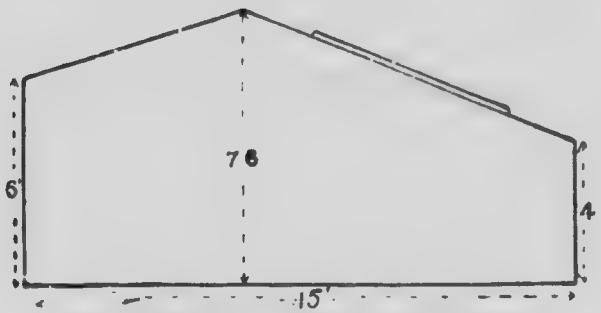
THE SHED ROOF. THE COMMONEST TYPE.

The Shed Roof.—This type is probably the most popular; it is easy of construction and allows a high space for the windows. It also provides a lower ceiling at the back where the roosts can be placed. It has the additional advantages that rain drops at the back of the house and does not muddy up the front where the chickens may be. Some of the disadvantages of this house are that in a wide house the roof is not so strong, and snow piles up in snowy countries; it does not provide an attic for straw in a moist climate and it lacks somewhat in appearance.



THE SIMPLE GABLE ROOF CONSTRUCTION.

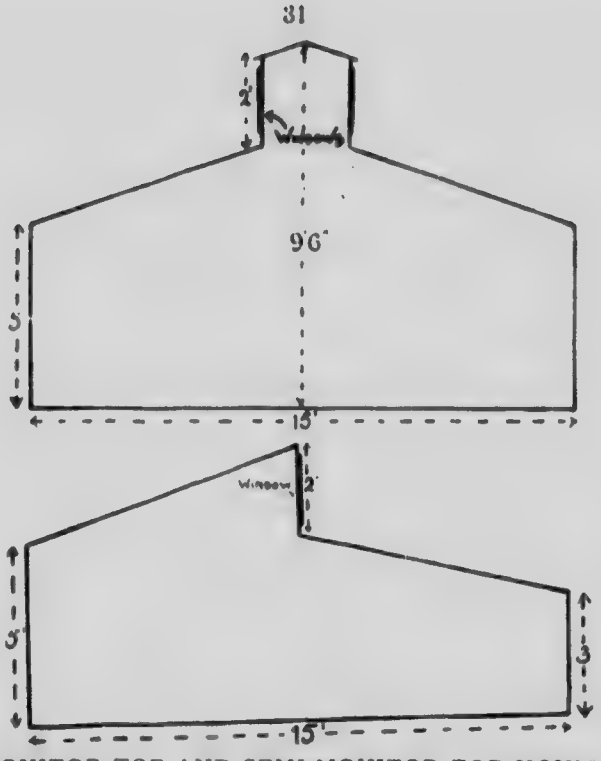




TWO OTHER FORMS OF GABLE ROOF.

The house with six feet frontage is to be preferred. The skylight shown in the house with the four feet frontage is not practical where there is a heavy snowfall. It also has a tendency to make the house unduly warm in the day time with too great a fall in the temperature at night.

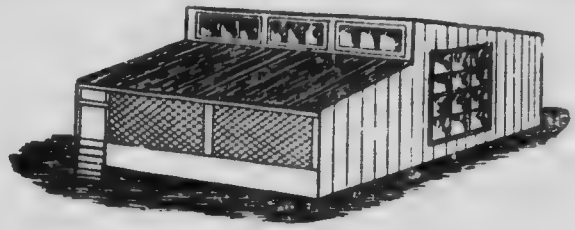
The Gable Roof.—The gable roof is probably the next most popular construction. This roof gives a more even height throughout, has the better appearance from the outside, and allows an attic for a straw loft. On the other hand, double the eave-troughing is necessary and if troughs are not used the water drops in front of the building. It does not allow the same space for the window, and may provide more height at the back of the house where the roosts are placed than may be required. As it allows space for a straw loft, which helps keep the house dry, it is popular in moist or cold climates.

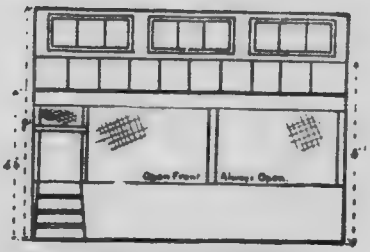


MONITOR TOP AND SEMI-MONITOR TOP HOUSE.

These styles of roof are frequently used where the house is very deep. The Monitor house is sometimes used where it is necessary to place the house north and south and facing east and west. In this case, the alleyway is run through the middle of the house and opens on both sides. This allows the morning sun in the east side, the evening sun in the west side, and the windows in the top permit the sunlight to strike the further row of pens. This type is sometimes adopted for housing ducks.

The other house, the Semi-Monitor type, may be used where a double row of pens is necessary, but is never practical except when facing the sun.





SEMI-MONITOR HOUSE.

In addition to the origin ole roof there are two different constructions of this roof. The apex inste of being in the centre may be placed nearer the fron or the back. One construction has the long part of the roof to the back and the small part to the front; in this the back wall is low and the front wall high, this allows for a fairly high window and a low place for the roosts. We have found that as a rule this style of house with the higher front gives better results than where it is turned the other way.

The Monitor Top House.—This is a gable roof with a farther projection at the top, having a little roof of its own. The sides of this roof at the top contain windows to permit sunlight and allow for ventilation. This style is not used as much now as formerly.

The Semi-Monitor Top House.—The Semi-Monitor Top House is a double roofed house, but instead of the two sides going to one point at the top, the south side of the roof goes to the centre a foot or two lower than the north side. This space allows for a window which permits the sunlight to get to the back of the interior.

COTTON FRONT LAYING HOUSES USED AT INDIAN HEAD, SASK.
These houses are 12' x 16' and on the level prairie can be moved with ease by a four horse team.

Cotton Front House.—Of recent years the open or cotton front house has become very popular in places having a fairly moderate climate and is used in localities even where the temperature is extremely cold. It is for the purpose of giving more thorough ventilation. So called cotton front houses may have other material beside cotton on the south side, but more or less of the front is given up to this or similar material. Various plans of the cotton front are given, a number are used in the west, and as far north as Edmonton have proved quite satisfactory. Where there are no windbreaks the cotton front may not prove as satisfactory as where these are provided. Where there is any doubt as to the suitability of this type part of the window or door can be replaced by cotton or a section of the south wall, as seems best. Should the arrangement not be satisfactory, the cotton can be removed, or if it fills the bill, it can remain and if so desired it can be increased.

Some houses are built with a window and cotton screen for the same opening though the glass window does not make the house warmer. Abundance of ventilation is absolutely necessary and if the open front is practicable in your individual climate, try it. The degree of openness can be decided by experience.

OPEN FRONT HOUSE USED IN BRITISH COLUMBIA.

This house gives the poultry an abundance of fresh air and a certain amount of sun light. On the side opposite the door is placed a window.

Open Front Houses.—Other houses are built open with only screen wire to keep the hens in. These houses are built low in front and the sunlight is admitted some other way. They give good results in a moderate climate and even in colder locations have sometimes proved practical. One, however, must use his own judgment on just how open the house should be built. It might be remembered that there is no virtue in the cold itself. A cold house is better because of the better ventilation and consequently healthier flock. If this can be obtained with a moderately warm house, by all means have it.

Cold vs. Warm Houses.—As has been stated, the cold house is satisfactory, not simply because it is cold, but because suitable conditions can be more easily obtained. A house built warm enough to keep water from freezing is hard to ventilate. Should the windows be used for ventilating, the house becomes a cold one and the extra expense in the warm building is money lost. Ventilation must be provided even if the heat is sacrificed. Should artificial heat be introduced, it is hard to keep it uniform and experience has proved that there is more sickness in a heated house. It is not claimed that a warm house may not provide just as many eggs for the time being, but the fertility is poorer and the strength of the germ lower, and if warm houses are used each succeeding year the probabilities are that the constitution of the flock will become weaker and weaker.

Photo by Dr. Shutt.

A HEATED POULTRY HOUSE NOT BEST.

Hen houses that lack sunshine and fresh air are unsatisfactory nor will artificial heat improve them. Such buildings are usually expensive and it is impossible to keep the birds housed in them healthy.

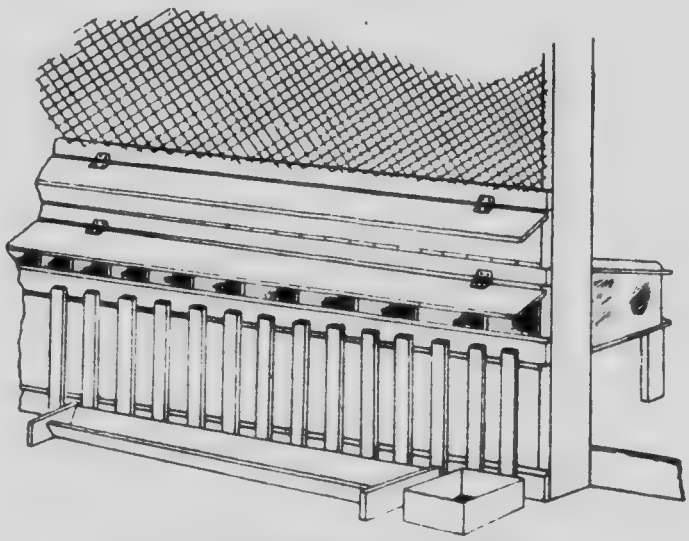
INTERIOR ARRANGEMENTS

The construction of the interior arrangements of poultry houses is almost as important as the structure of the building itself. It is sometimes the case that success or failure depends upon the convenience, or the ability to economize labour, and thus save expense. It has been said that the essential factors to be kept in mind in poultry house construction are good light, ventilation, freedom from draughts and from dampness. After these points have been obtained, then the builder will look to the arrangement of the alleyways, roosts, windows, dropping boards, nests, feed hoppers, yards and fences so as to receive the greatest service for the least expense of time and money in the building, care and upkeep of the same.

Alleyways.—Alleyways are expensive and do not always economize labour. There are conditions where an alleyway may be advantageous. Alleyways aid in showing various pens or breeds of birds to customers. For the practical poultry man, however, the alleyway is nothing but a bill of expense.

Some of the advantages of the alleyways might be mentioned; a person can go through the poultry house without disturbing the pens, feed can be fed and water given from the alleyway. The pens can be so arranged that some of the cleaning can also be done, and the eggs collected without having to enter the pens. It is also an advantage to see one pen without molesting or having to go

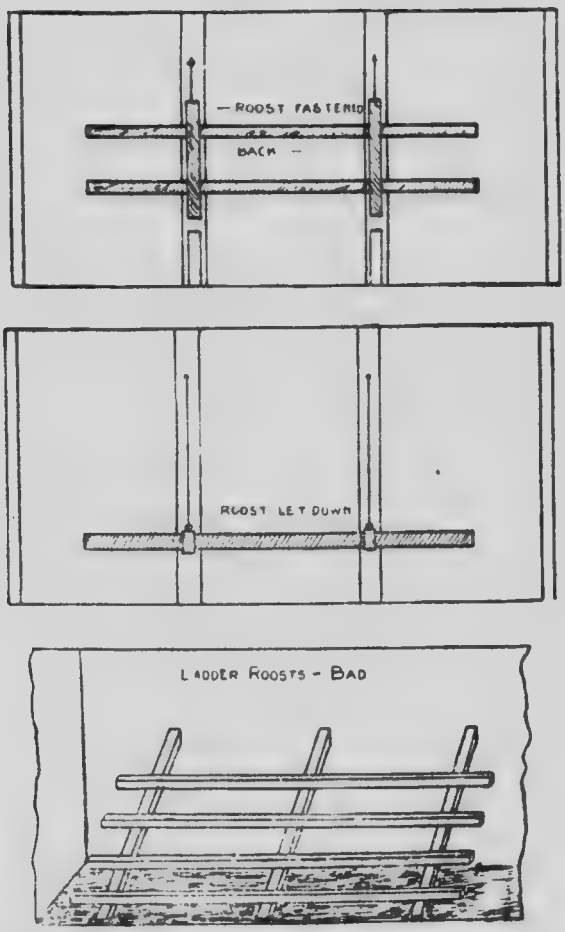
through the other pens. On the other hand, it costs money to build an alleyway, it has to be built at the highest side of the house or at least where the ceiling is sufficiently high to allow one to walk through; whether the house is heated sufficiently or not this space must be warmed the same as the rest of the house, which all takes money and detracts from the comfort of the fowl. It is a question as to whether the alleyway saves the feeder any steps. It is probable that a feeder can feed his fowl just as well going through from pen to pen as he can by means of an alleyway. The contention that one can do most of the work from the alleyway is not practical. Feeders who do best with their poultry want to get right into the flock and are not satisfied unless they see how each pen or each individual is taking the food. The feeder cannot get too well acquainted with his birds, and the best way to get acquainted is to go through the pens frequently. Doors should, however, be wide enough to admit a wheelbarrow and should swing both ways. In extra long houses, feed carriers are sometimes used to advantage.



HINTS ON ARRANGING ALLEYWAY.

Where alleyways are used the accompanying illustration will give hints on how the work can be made easier.

Floor Space for Hens.—This question, like many other questions connected with poultry house construction, cannot be answered definitely. The floor space which a hen requires depends on several things: (1) The breed of the hen; some hens require more space than others. (2) The nature of the food and how it is fed. Hens that are fed in a heavy litter during the winter where the getting of the food entails considerable effort will obtain all the exercise necessary without too much space. (3) Ventilation.—The house poorly ventilated will not accommodate as many hens as a house properly ventilated. A few years ago when poultry houses were kept warm, instead of being ventilated, it was thought that each hen should have between 8 to 12 square feet of floor, and in all probability she did, but the same breed of hen does better now in the house properly ventilated with 4 square feet than her ancestors did with 12, and where good ventilation is provided 4 to 5 square feet is enough for the average hen.



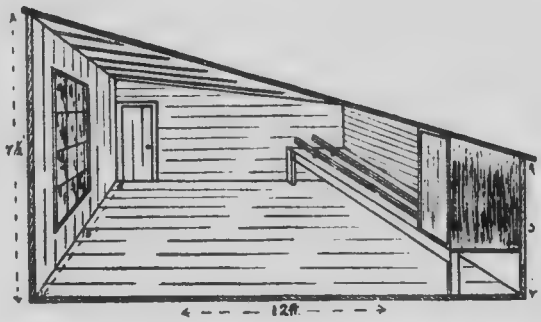
STYLES OF ROOSTS.—GOOD AND BAD.

Convenient roosts are made from 2 x 4 scantling rounded on their upper edges and fitted into two pieces hung on the back wall. The roosts are held in place by chains which are used to fasten the roosts up to the wall in the daytime, as seen in the two upper cuts. The lowest cut shows the ladder roost, which is very insanitary and gives poor results.

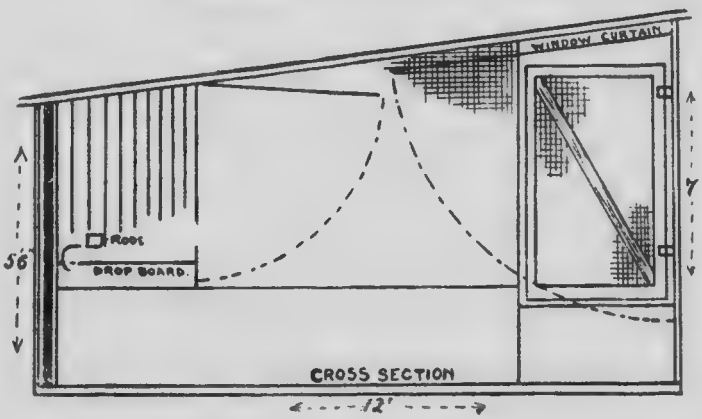
Roosts.—The American breeds require about 9 inches per hen of roosting space. If more than one roost is required, place the first about 10 inches from the wall, and the others from 18 to 20 inches apart. When cold houses are constructed, it is advisable to have only sufficient roosts to accommodate the hens. Roosts should not be placed too high; between 2 and 3 feet from the floor is high enough for most breeds. High roosts give trouble in that heavier birds are not able to reach them and the jumping off the roosts sometimes causes bumble foot and kindred diseases. Roosts should never be constructed on the ladder principle, but where more than one roost is required they should all be placed on the same level. Where roosts are placed one higher than another there is

considerable commotion every night as the hens are getting on to the roost. Weaker hens usually go to roost first and of course take the top places. The strong, vigorous hens, going later, also wish for the top seat, and displace those already roosting. This occurs every night and to avoid it, by all means put the roosts on a level.

Roosts should not be large. The small edge of a 2 x 4 inch scantling is quite large enough. Round cedar poles serve the purpose very well, but the splitting of the poles causes cracks in which the vermin harbour. Roosts should be made so that they can be cleansed easily, and made movable as all interior fixtures should. It is a good plan to hinge roosts to the wall so that they can be raised in the day-time or for cleaning out purposes. The roosting quarters should always be on the warmest side of the house, or at least, farthest away from the windows. No ventilation should be admitted through the wall near the roosts; sometimes, when nights are especially cold, a cotton screen is let down in front of the roosts. It is an advantage in that it keeps the roosting quarters a little warmer, but the custom of boarding up the roosting quarters so that there is very little ventilation allowed and no space for cleaning or letting the sun enter during the day, is bad.



CROSS SECTION OF HOUSE.
Showing arrangement of roosts and drop boards.



CROSS SECTION OF HOUSE.
Showing roosting quarters and cotton screens.

A NEST CABINET.

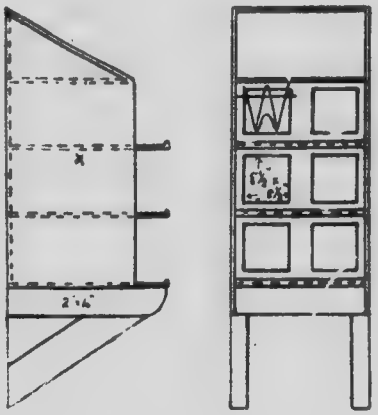
When dropping boards are not used the nests may be arranged in the form of a cabinet. The nests are made in movable sections and can be removed for cleaning. Those shown are trap nests. The roosts are seen hung up against the back wall.

Dropping Boards.—These are platforms beneath the roosts for the purpose of catching the droppings. Where these boards are used they should be at least 10 to 12 inches lower than the roost. They should be built of matched lumber, well put together. They should be 20 inches wide for one roost and 3 feet wide for 2 roosts. Dropping boards require cleaning at least once a day if the place is to be kept neat and clean. In cold houses, where everything freezes, a dropping board is a considerable bother, and a good many poultry keepers are discarding it entirely. A farmer's poultry plant can do without a dropping board and the house can be kept as clean and presentable with less labour. For those, however, who have time to clean the board and who prefer having it, have it cleaned daily and covered with sawdust or some other good absorbent.

Nests.—Many people use barrels, old boxes, etc., for nests; these, besides being unsightly, are hard to clean and sometimes are the cause of broken eggs. Better to make a few good nests which can be kept clean with little trouble; dark nests sometimes prevent hens from getting the egg-eating habit, but, as a rule, if hens are properly fed they will not develop this habit, and there is no reason why nests should be made dark for this purpose. From 12 to 15 inches is a suitable size for nests. They should be placed fairly close to the ground, about the same height as the roosts. Where dropping boards are used the space underneath may be utilized for nests. Never have nests open at the top where the hens may roost

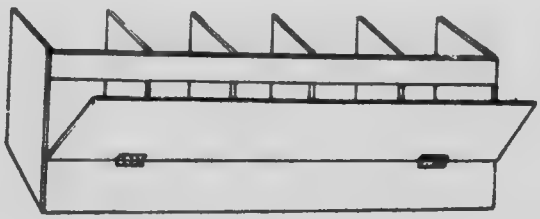
on the edges. No such nests can be kept clean. Have the top covered and the opening from the side. Fine straw or hay makes a good nesting material. The nests should never be allowed to become filthy; make them movable and keep them clean; spray them occasionally.

If nest eggs are used, always use the artificial kind; never allow a fresh egg to stop in the nest over night. A good way to make an artificial egg is when using the eggs in the kitchen, extract the contents of several eggs by means of a hole at each end, and when sufficient are at hand, mix some plaster of pa.is, fill the shells and set them away to harden.



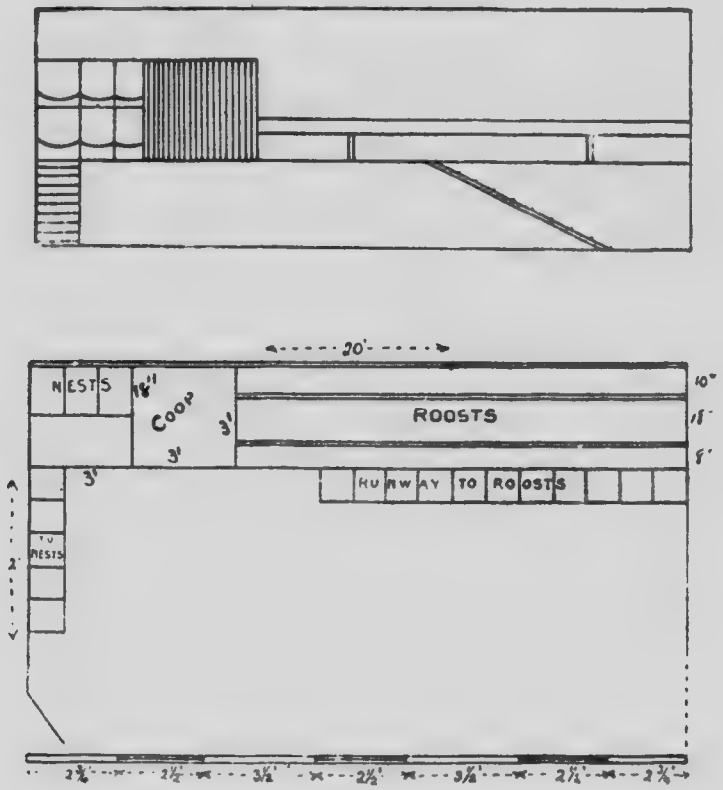
CONVENIENT STYLE FOR NEST CABINET.

ARRANGEMENT OF NESTS FOR PLACING OVER DROP BOARDS.



SECTION OF NESTS FOR PLACING UNDER DROP BOARDS.
This cut shows entrance from behind, though the front entrance is preferred by some.

During the winter time hens do not require as many nests as will be necessary in the summer time. Usually one nest to every six hens will be found sufficient. If, during the winter when the hens are not laying very heavily, half of these are closed there will not be so many frozen eggs.



COOP SHOWING CONVENIENT ARRANGEMENT.

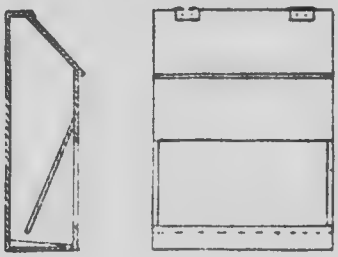
Coops.—Every pen should have a coop into which a cock or a broody hen can be placed. These coops can be placed above the roost or anywhere so that they do not interfere with the floor space; in fact everything in the way of furnishings is better to be placed high enough to allow the hens to scratch underneath.

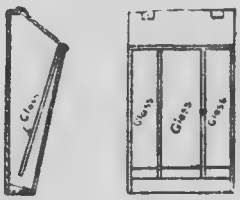
Feed Hoppers.—Most feeders use a hopper of some kind in their poultry house. This is a small box into the bottom of which is placed a trough. It is so arranged that the feed comes down into the trough as it is eaten out. Several cuts of various styles of hoppers are here given.

Watering.—Arrangements must be made to give the hens plenty of water. A water trough or a dish of any kind can be kept for this purpose. It is well to have a stand for the water so it will be high enough that the hens in scratching

FEED HOPPERS AND SUPPLY BIN.

Two hoppers, one for dry mash and one for grit, shell, etc. The supply bins hold the supply of grain which can be put in by the bag.





BRAN AND GRIT HOPPERS

Showing the construction of a cheaply made hopper for bran and dry mash, and small hopper for grit, oyster shells, and beef scrap.

among the litter will not fill it. Where a projection is placed over the water pan an ordinary milk pan can be used. It is always best to place the water pan near the door so it can be conveniently refilled.

Size of Pens.—The size of the pen should be made to suit individual conditions. On the ordinary farm, where unlimited range is given, pens can be made larger than where the range is limited. No definite figures can be given, but flocks have been successfully kept in pens of anywhere from 25 to 100 birds. The smaller the pen, the more expense for equipment and labour. The larger the pen, the more cheaply it can be made and looked after. On the other hand, it is a safe rule to go by, that the larger the flock, the smaller the individual egg yield.

VENTILATION

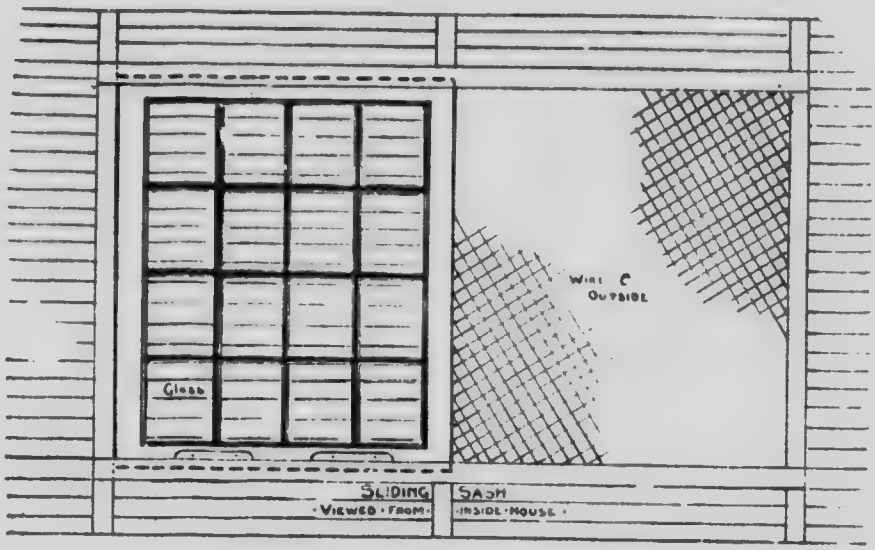
The various systems used in ventilating stables and other buildings have been tried again and again in connection with poultry houses. So-called ventilators have never given the best results. The trouble seems to be that where artificial ventilation is introduced, the evil effects overcome the good. The system most generally used for changing the air in the poultry house is by means of the straw loft, the window or the cotton front. Where the house is thus ventilated,

IDEAL VENTILATION.

The ventilation of the house can be arranged by the curtain front, or a window which will open, and a straw loft with an opening under the gables or through the roof. In the cut the arrows illustrate the movement of the air. They show that there is no dead air space, as is the case when the house is not sufficiently ventilated.

it should be practically tight on three sides. The window or the door can be opened and the air in the house changed without affecting the poultry. To assist in ventilation, the straw loft is often used. Poles, wire fence material, or anything that can be stretched along the ceiling and be sufficiently strong to support a few feet of straw in the attic, is all that is required. The straw will absorb the moisture from the atmosphere of the house, thereby keeping it dry. Through the straw a little fresh air may be allowed to circulate from an opening at one end under the gable, or there may be an opening at both ends if the straw be thick enough. When the poultry is situated in part of a building used for other purposes, the straw used for feeding or bedding purposes will benefit the poultry if stored over them. Never; in such a case, have a tight ceiling. There must be sufficient space

for the air to pass from the poultry house into the attic. Where the poultry house is placed in one corner of the stable, near where the stock is housed, it is usually difficult to keep the house dry. A tight partition between the poultry house and the stable is an advantage, but a straw loft with an opening above the poultry compartment is almost a necessity. By all means have the poultry house on the side with the southern exposure and don't be afraid to give it plenty of ventilation through the window or door.



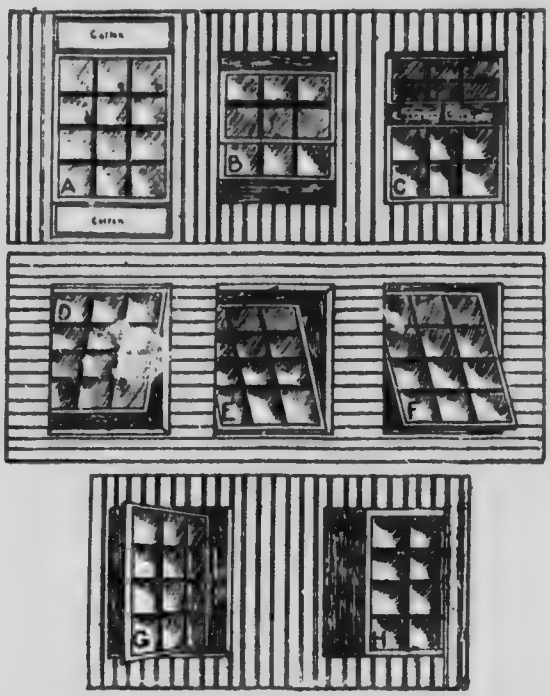
CONSTRUCTION OF SLIDING SASH.

Showing the best plan of arranging the ordinary sliding sash. Two cleats are nailed on the inside of the bottom of the frame. These cleats bear the weight of the window and run back and forth on a smooth edge. This allows the dirt and water to fall through.

Windows.

Construction.—Houses should be so constructed that sunlight may reach every part of the interior. Sunlight is our best disinfectant, and we should use more of it. By this it is not meant that the house should be built of glass. We must take into consideration the variation in temperature between day and night. Too much sunlight unduly heats the house during the daytime and the more glass there is the cooler the house is at night. No rule can be given, but roughly speaking, about one-third of the front might be given up to glass, and two-thirds to cotton. The shape of the window has something to do with the results. In deep houses (16 to 20 feet wide) windows should be arranged up and down, not crosswise; a window 3 x 5 feet, placed with the 3 feet up and down, will not be as satisfactory as if it were placed the other way. It is not that the windows placed vertically will allow more sunlight, but the rays of the sun going through a vertical window strike more of the interior, just as a wider broom takes a wider swath, so the rays of the sun going through the windows vertically touch more space than when the window is placed horizontally.

Method of Hanging Windows are better if not secured fast. There should always be provision made for opening them, and double windows should never be used. It is well, however, where high winds are prevalent, to have the windows arranged so that when they are opened up the draught will not strike immediately upon the fowls. This can be managed by hanging the windows on the inside at the bottom and a chain or rod used to let the top of the window into the house, more or less, as desired. The ordinary sash window serves very well in most locations. The top sash can be let down and the bottom still used to protect the poultry. Various hints for fastening windows are given in the accompanying illustrations. Probably the most popular window and the one that gives the best results in most localities is the sliding window. A window that slides back and forth can be adjusted to admit almost any portion of air required. With this style of window, however, much trouble will be obviated if there is no groove at the bot-



VARIOU" METHODS OF HANGING WINDOWS.

A.—Sliding sash with cotton screen above and below. This type is used in a number of up-to-date poultry houses and gives good results.

B.—The ordinary double sash.

C.—Double sash, one part of which opens into the house.

D.—Single sash hinged at the top.

E.—The same hinged at the bottom. This prevents the wind from striking directly upon the birds.

F.—Hung at the middle, horizontally.

G.—Hung at the middle, perpendicularly.

H.—Ordinary sliding sash.

tom. This groove always collects water and moisture. It freezes and the window is fast wherever it happens to be. The best arrangement for a sliding window is to have two small cleats nailed to the inside of the bottom of the frame and a strip arranged so that it holds the bottom of the window in place and upon which the two cleats rest. This allows the water to fall through and leaves nothing to obstruct the sliding of the window. For large windows the sliding style is much safer. The window cannot blow out and there is very little danger of anything breaking and allowing it to drop. Small windows, however, can be hinged with fairly reasonable safety.

YARDS AND FENCES

Fences.

Where stationary houses are built (and there are many places where the movable house will not be practicable), permanent fences and yards will be required. It is always wise to put in good fencing. Have it made of wire, rather than so-called poultry netting; the netting is short-lived, draws up from the bottom and hangs from the top to such an extent that it is a never-ending worry to keep poultry in or out. Good serviceable poultry fences are made by most fence companies, and, as a rule, the best are the cheapest. The best method of planting the posts for the farm fence should be followed; the corner posts especially must be firm; the slightest sag in the poultry fence is more serious than in the farm fence, where larger animals are concerned.

TOO MANY YARDS

In this house where but one breed was kept, the farmer had fifteen different yards. The yards in this case cost about as much as the house. They have, however, since been remodelled and only three large yards have been left.

Height of Fence.—For American breeds fences do not require to be over 5 feet high, but for light breeds, a couple of feet more will be necessary. Never put a pole on the top of a fence, as it affords a lighting place and the fowl will more easily get over. For those who make their own fences the following measurements may assist. A fence built of 16 strands should have the following distances in inches between, counting from the bottom, 1½, 1½, 1¾, 1¾, 2, 3, 4, 4½, 5, 5, 5½, 6, 8, 8. A barbed wire can be put on the top if this is necessary.

YARDS.

Size.—The larger the yard, the better. Large yards, however, are not always available, and smaller space has to do. For economy, the nearer square the yard can be the better. Yards cut into a number of small yards are an expense and a nuisance. Where only one breed is kept it is better to let several pens of fowls have the run of a large yard, rather than cut it up and give each pen a part. Every internal fence that is removed adds to the liberty of the individual hen. Yards should be arranged so that they can be cultivated. If large, use a horse to do it. To have healthy hens, yards must be kept sweet, and to do this it is ad-

Photo by Dr. Shutt.

TURKEY HOUSE.

The house shown in the illustration makes an excellent shelter for turkeys. When the poults are young they are put into this house with a hover or hen. It also makes an ideal place for the breeders. The house is 10′ x 14′, 5′ high in the front and 8′ at the rear. Cotton window blinds can be drawn down before the window openings, though they are very seldom used. The roosts are across the back corner away from the door and quite high from the floor. The house is made of single T & G board, one thickness of floor and the roof is covered with paroid roofing. The house would no doubt be improved when used for young poults if there was a 12 or 15 inch protection along the front.

visable to cultivate and grow an associate crop. Double yards are an advantage. By double yards is meant that the fences are so arranged that the hens can be let into one part of the run for a while and then into another. This gives an opportunity to cultivate and grow a crop in the yards alternately. The bare yard with no shade, never cultivated, is sure to have sickly poultry.

If long houses divided into a number of pens are used it is a good plan to have the yards both at the front and the back, small yards to the south for the individual pens and one or more large yards at the back or north. The small yards towards the south may be used during the breeding season and all birds turned into the north yards for the summer. The small yards may then be cultivated and a crop sown if necessary.

POULTRY ADMINISTRATION BUILDING, CAP ROUGE, P. Q.
The basement is used for incubators, coal and egg room, the first floor contains a feed room, an office and a bed room. The attic is used for storage.

REMODELING

There are many poultry houses in use that are not satisfactory but that by a little work might be made so. Usually it is the lack of sunshine and fresh air that are the chief faults. Both of these can be admitted by opening up the south side of the house. Take practically all the wood out of the south wall, leaving only about 18 inches of the wooded wall along the full length above the floor. Above this put in glass and cotton in the proportion of 1 to 2 and have it so made that it can be opened up. Batten up the cracks in the other three walls. Make the furniture movable. Whitewash the interior. If the ceiling is too high put in a lower one made of poles and fill above with straw. There are many houses that, as they are, may be entirely unsatisfactory but which with a few hours work might be made as good as the best.

Photo by Dr. Shutt

A REMODELED HOUSE.

This house was built by the late Prof. A. G. Gilbert, whose picture many of his old friends will recognise, and was what was called a "scratching shed" house. It was not very satisfactory being too expensive for the number of birds it would accommodate; it was therefore changed by him to what appears in the next illustration.

Photo by Dr. Shutt.

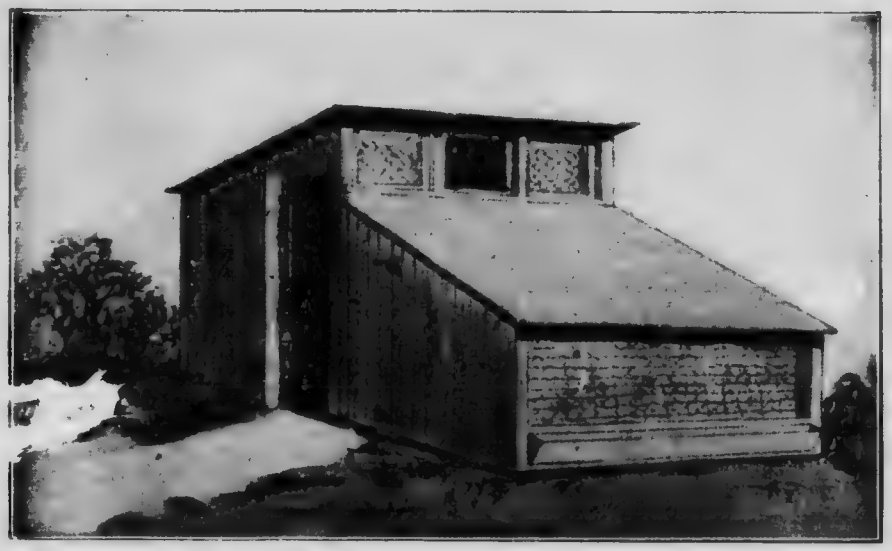
A REMODELED HOUSE.

The low open front was being recommended highly and an addition was built to the front side making the total width 18 feet, the front was left open to the floor and four pens made in the house. The next step is shown in the following illustration.

Photo by Dr. Shutt.

A REMODELED HOUSE.

The entire open front as shown on page 49 was too cold for the Ottawa climate and this further change was made, a 15" board protection placed along the bottom and cotton screens hinged to cover the rest. The house was also made into 2 pens instead of 4 and later made into one large pen. This arrangement makes as ideal a house as this front permits at Ottawa, though the type does not suit our climate here.



THE UTILITY POULTRY HOUSE.
Designed by G. E. Parham, Supt., Invermere, B. C.

THE UTILITY POULTRY HOUSE

Advantages of This Type of Colony House.

1. When the two parts are run together it makes a house large enough to accommodate 25 or 30 laying hens throughout the winter.

2. The front section can be used for brooding chicks in the spring and the rear section for a breeding pen, or the whole winter flock, when they get free range, can be accommodated in this half.

3. For poultrymen who have only one horse, this gives a fair-sized winter house, but one that can be moved by a single horse when required.

4. On rough or uneven land the fact that it can be separated into sections makes it possible to move it from place to place.

Utilized Throughout the Whole Year.

The main feature which distinguishes this house from others is the arrangement whereby it is possible to utilize the building to the full by converting the winter scratching shed into a separate brooder house during the summer months when the scratching shed is not needed.

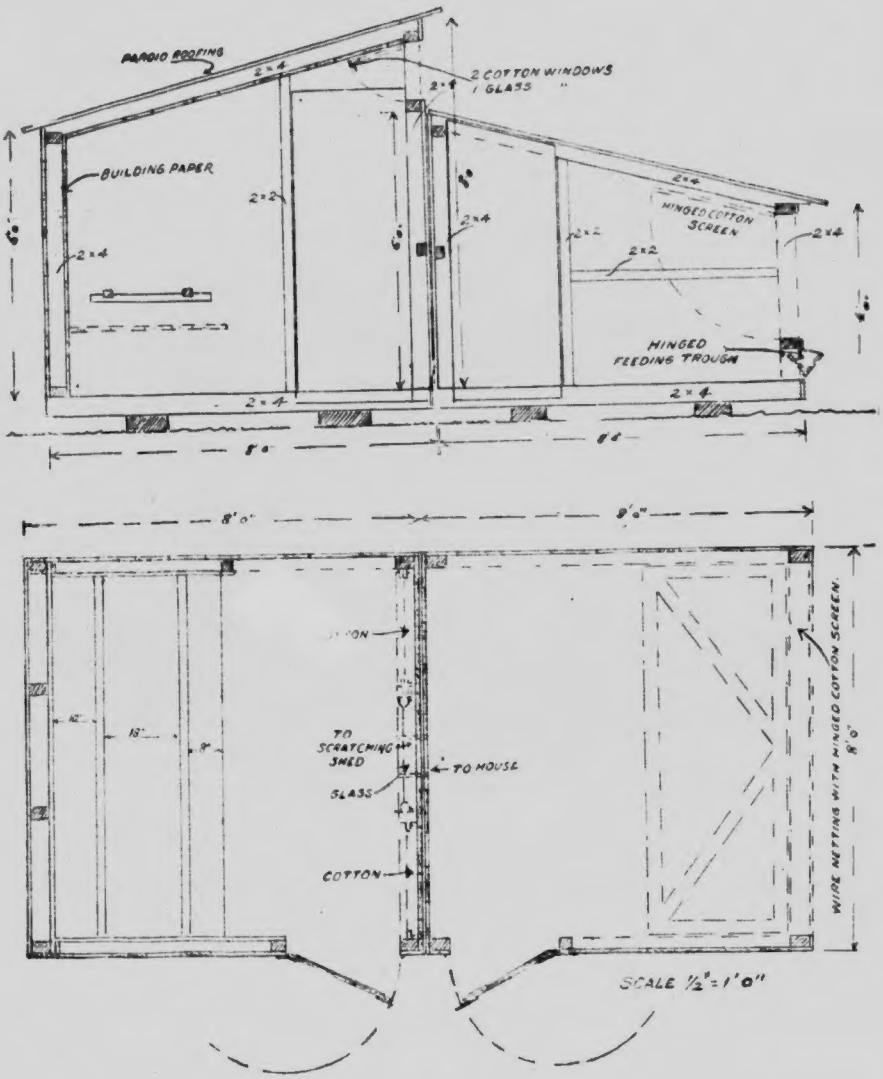
The building, as constructed in the accompanying drawings, is of the moveable type, and so that it may be constructed as lightly as possible it is suggested that the corner studs only be constructed of 2 by 4's and the rest of the studding be of 2 by 2's.

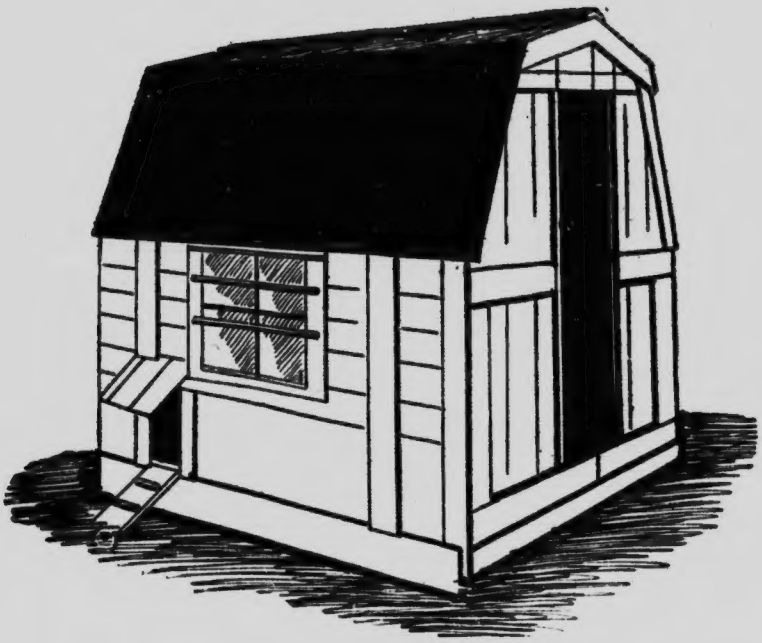
It being of the first importance that the birds should be supplied with comfortalbe roosting quarters in the cold season, the rear portion, as shown in the accompanying sketches, should be lined with building paper on both sides of the studding, and a second sheathing of lumber affixed on the inside of the studding, making a dead air space and preventing draughts.

If desired the roosting section may have cotton instead of wood in the front, fifteen inches above the floor to a few inches below the place where the front roof joins.

List of Material Required

Eleven pieces 2 inches by 4 inches, 16 feet long.
Four pieces 2 inches by 4 inches, 12 feet long.
Eight pieces 2 inches by 4 inches, 18 feet long.
Four pieces 2 inches by 4 inches, 12 feet long.
Four pieces 6 inches by 6 inches, 10 feet long for runners.
Seven hundred board feet shiplap.
Four yards poultry wire.
Four yards cotton cloth.
Roofing to cover 162 square feet.
Hardware, hinges and fastenings for two doors and four windows.
Nails, 10 pounds 4-inch.
Nails, 40 pounds 2½-inch.


PAROID ROOFING
2 × 4
2 COTTON WINDOWS
1 GLASS "
BUILDING PAPER
2 × 2
2 × 4
HINGED COTTON SCREEN
HINGED FEEDING TROUGH
8'-0"
8'-0"
TO SCRATCHING SHED
TO HOUSE
GLASS
COTTON
WIRE NETTING WITH HINGED COTTON SCREEN.
SCALE ½" = 1'-0"



A PIANO BOX HOUSE.

Made from two piano boxes, a little roofing paper and a window sash or cotton.

Photo by Dr. Shutt.

A ROOM BROODER.

An illustration of a room brooder house in which a coal burning stove is placed. This house is large enough to accommodate from three hundred to five hundred chicks and a simple arrangement of yards such as shown makes a most convenient place for brooding chicks until they can have free range. The stove is very easily regulated and the amount of fuel required is small.